AFRI
Alberta Forestry
Research Institute

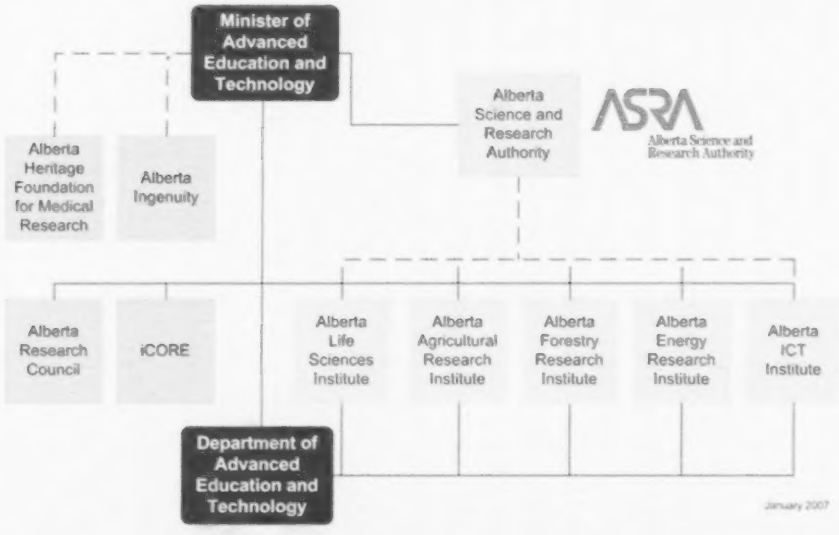
Alberta Forestry Research Institute
Annual Report 2008-2009
A Year in Review

OVERVIEW

The Alberta Forestry Research Institute (AFRI) is an unincorporated Board consisting of representatives from industry, academia and government established under the *Alberta Science and Research Authority Act*. AFRI's mission is to enhance the contribution of innovation and research to the economic, environmental, and community sustainability of Alberta, and to promote the global competitiveness of its forest sector as a key contributor to Alberta's growing bioeconomy.

As Canada's fourth largest manufacturer of forest products, Alberta's forest sector contributes over $8 billion to the provincial economy ranking third after the energy and agricultural sectors. Forestry is the primary industry in over 45 Alberta communities, of those 12 communities are deemed forestry dependent. To maintain its status as a vital contributor to Alberta's prosperity, the forest sector must innovate to remain globally competitive and ensure the sustainability of our resources and communities. Investment in research and development are the foundations of this innovation.

The key responsibilities of AFRI are to prioritize, coordinate, and promote innovation and research, and encourage their application in our forest sector. AFRI focuses on Fibre Conversion Technologies and the Resource Management Centre as its key priorities.



Message from the AFRI Board

The past year has seen AFRI build strong foundations for its role in sustaining and renewing the province's forest sector.

AFRI has set a high standard of innovative thinking, looking to tomorrow's science for new solutions and opportunities. Our aim is to provide a model for innovators in industry, the people who ultimately must incorporate the advances in genomics, nanotechnology, and biorefining which are needed for industry and community sustainability.

A firm foundation of strategic directions, complemented by a growing showcase of research results and demonstration projects, is taking shape. Our thanks must go to all members of the Board for supporting this vision.

The Co-Chairs appreciate the AFRI Board's support for the Roles and Mandates Framework of the Provincially Funded Research and Innovation System in Alberta. We anticipate that the development of a new bioindustries corporation will bring energy and creativity to the challenges and opportunities of the next century of innovation in the Alberta's Forestry sector.

Doug Elniski, MLA
Co-Chair

Con Dermott
Co-Chair

June 2009

KEY ACTIVITIES AND ACCOMPLISHMENTS:

Key activities in 2008-2009 were aligned with strategic directions and other initiatives outlined in AFRI's business plan, and with those of Advanced Education and Technology and the Government of Alberta. AFRI's business plan focuses on resource management and fibre conversion technology, with increasing emphasis on genomics, molecular biotechnology, nanotechnology, bioproducts, biorefining, bioenergy, and other science solutions to mitigate impacts of the mountain pine beetle.

The following are highlights of some key activities undertaken by AFRI in 2008-2009:

- AFRI has helped address the challenges facing Alberta's pine forests, forest managers, and industry through strategic investments in mountain pine beetle research. Research investments involving the Innoventures Canada will explore utilization of mountain pine beetle killed wood to produce high quality newsprint.

- The AFRI Board supported the Boreal Reclamation Program which will identify ways to return disturbed sites to a state of equivalent capability on industrially disturbed sites in the boreal forest region of Alberta. This program will also promote opportunities for displaced workers, communities in transition, and aboriginal enterprises in plant and soil products; reclamation data capture, and reclamation contracting.

- AFRI was instrumental in the establishment of the Fibre Mat Development, Production and Testing Centre at Drayton Valley. This Community Development Trust Fund (CDT)-sponsored project is collaboration between the Town of Drayton Valley, Tekle Technical Services Inc. (TTS), and Advanced Education and Technology (AET). TTS will provide an incubator for natural fibre technologies and companies to bridge the gap between basic lab-scale research and development, and commercialization of products and technologies in the natural fibre industry.

- AFRI continues to support the Sustainable Forest Management Network (SFMN). The SFMN is designed to develop knowledge, strategies and tools to ensure that Canada's forested lands are effectively managed, such that biological diversity will be preserved and the resource base will be sustained for future generations.

- The AFRI Board supported the development of a research and utilization roadmap for nanocrystalline cellulose that complements the Alberta Nanotechnology Strategy, the North American Forest Products Industry Technology Roadmaps, and Making the Most of Alberta's Lignocellulose Resources. The roadmap will serve as a guide and contribute to the development of basic and applied research, technology transfer, and utilization priorities.

- Together with academic and funding agencies across Canada, AFRI continued its support of FORWARD, the Forest Watershed and Riparian Disturbance project, to study water issues in specific forests, including one management area in Alberta. AFRI also continued its involvement with the large-scale Ecosystem Management by Emulating Natural Disturbance (EMEND) project in north-western Alberta.

- AFRI was key to the establishment of the Athena Chair in Life Cycle Assessment in the Faculty of Environmental Design at the University of Calgary. This initiative creates infrastructure in Alberta to allow exploration of questions related to biological substitutes and where they the most economic sense when moving from a fossil fuel-based economy to a bio-based economy. The Life Cycle Assessment Chair assists in building construction material manufacturers in Alberta to produce "green" building materials.

- AFRI continues to support the Foothills Research Institute – a non-profit corporation conducting applied research in sustainable forest management. This initiative creates an opportunity for Alberta to take a leadership role as a node of the Circum-boreal Forest Network. The Foothills Research Institute also focuses on climate change impacts and adaptation and on the hydrological impacts of mountain pine beetle infestations.

- AFRI continues to support the Biomass Combined Heat and Power Pilot Plant project. This project is designed to build and demonstrate combined heat and electric power pilot plants fuelled with biomass that can be used to supply power to remote communities.

- AFRI continues to support work with ARC and with FP Innovations in areas which include value-chain improvements, value added products, biomass conversion technologies, and nanotechnology. These initiatives address priorities identified in the forestry sector and are supported by both industry and academia.

PROGRAM EXPENDITURES:

During 2008-2009, $9 million was invested in AFRI's strategic theme areas: Resource Management Centre and Fibre Conversion Technologies.